

parents for nontoxic alternatives

**PUBLIC COMMENT
FOR CONSIDERATION BY THE
EPA SCIENCE ADVISORY BOARD (SAB) DRINKING WATER COMMITTEE AUGMENTED**

March 30, 2011

I am Yanna Lambrinidou, President of Parents for Nontoxic Alternatives, a non-profit children's environmental health organization in Washington DC. I am also an investigator on a three-year Robert Wood Johnson Foundation research grant that will study public education messaging, potential health impacts, and effectiveness of partial service line replacements, in collaboration with Virginia Tech, DC Water, and other organizations. I would like to make three points based on my four-year experience with the LCR's partial lead service line replacement requirement in the District of Columbia:

Point 1: The controversy surrounding the LCR's partial pipe replacement requirement makes your work – as members of the SAB – more challenging than it might seem. Judging from the reading list accompanying your charge, which includes at least two misleading papers asserting benefits from partial replacements,^{1,2} EPA is perpetuating a deceptive picture of current knowledge on the subject. I saw first-hand how these same studies, which are built on false assumptions and inaccurate facts, and are shaped by critical pieces of information that are withheld from even the most careful reader, were used repeatedly and without any qualifications to support DC's costly and ill-fated partial pipe replacement program in 2004-2006 and voluntary replacement program in 2007-2008. Intense scrutiny is necessary to understand the limitations of all the work placed before you. At this point, one has to wonder if your reading list has been selected to support an agenda of misinformation.

More than seven years ago, reasonable questions by scientists and the US Congress brought a halt to DC's lead service line replacement program, due to health concerns associated with "spikes" of lead detected in water after partial pipe replacement. The DC Department of Health requested additional data to scientifically establish the safety of partials. Results of the Wujek 2004 study (which is on your reading list and was co-designed by EPA), were put forth to convince the DC Department of Health that the District's partial pipe replacements were safe and could resume.³ The program was abandoned in 2008 due to cost and evidence of possible health harm.

Three years ago, the Reiber & Dufresne 2006 study (which was funded by EPA) was used by EPA in a Congressional hearing, to successfully convince lawmakers that when corrosion control is effective, partial replacements do not result in significant lead spiking.⁴ We now know, from

DC's 2006 post-partial replacement data and from the 2011 CDC study, that this is not always the case, and that Congress' legitimate concerns were not answered completely and honestly.

For more information about important limitations in these two studies, see slides 44-52 and 53-57 from Lambrinidou, Edwards, Triantafyllidou. 2010. "Flawed Science Begets Flawed Policy: EPA's Lead and Copper Rule, Partial Lead Service Line Replacement, and Elevated Blood Lead Levels Among Children," presented at the 138th annual meeting of the American Public Health Association, <https://www.filesanywhere.com/fs/v.aspx?v=8a6b678a5c66737a9e66>.

Point 2: EPA played a central role in promoting and defending partial pipe replacements in Washington, DC, an intervention that cost more than \$100 million in ratepayer money⁵ and has now been shown to have increased the likelihood of elevated blood lead in children.⁶ The SAB should not underestimate the extent to which EPA can attempt to control information in order to influence the outcome of your deliberations.

EPA has been aware of concerns about the short- and long-term safety of partials for over 20 years. In the 1991 LCR, EPA acknowledged that partials are not the preferable solution to lead problems, but predicted that homeowners would generally opt for full replacement.⁷ In practice most homeowners have opted for partial replacement. Yet in Washington, DC, EPA took a leading role in promoting the accelerated replacement of lead service lines and defending the safety of partials. In the end, DC's lead service line replacement program resulted in over 15,000 partial pipe replacements, despite repeated pleas from independent experts and the public for the cessation of this unnecessary and potentially harmful intervention.^{e.g.,8,9,10,11} The historical timeline shows a pattern of persistent mismanagement by EPA. I begin with one internal-agency e-mail from an exasperated lead corrosion expert at EPA, early in the LCR's history:

1997: "[T]he bottom line is that EPA is promulgating a policy that KNOWINGLY INCREASES LEAD LEVELS for an UNKNOWN DURATION."¹²

2003: DC begins replacing lead lines to comply with LCR lead service line replacement requirement.

February 2004: Virginia Tech lead corrosion expert Marc Edwards finds that chloramine in the water accelerates galvanic corrosion and tells EPA that partial replacements should stop immediately.⁸ An internal-agency e-mail among two EPA employees states that galvanic corrosion has been "systematically ignored" by the Office of Ground Water and Drinking Water (<http://www.filesanywhere.com/fs/v.aspx?v=8a6b678b5b627676ae6d>).

March 2004: Reasonable questions by scientists and Congress bring a halt to DC's lead service line replacement program, due to health concerns associated with "spikes" of lead detected in water after partial pipe replacements. The DC Department of Health requests additional information to scientifically establish the safety of partials.

March-May 2004: EPA becomes a collaborator in the Wujek 2004 study. The study concludes that flushing of pipes immediately after replacement solves problems with lead spikes. It is later discovered through the Freedom of Information Act (FOIA) that every water sample in the study was collected when DC's water disinfectant had been temporarily switched back to chlorine, which effectively stopped lead leaching from service lines in Washington DC. This fact was never mentioned by EPA, the water utility, or the study authors. There were other problems with the study as well (Lambrinidou, et al. 2010, <https://www.filesanywhere.com/fs/v.aspx?v=8a6b678a5c66737a9e66>, and materials obtained via FOIA, <http://www.filesanywhere.com/fs/v.aspx?v=8a6b678b5b627676ae6d>).

May 2004: In response to the Wujek 2004 results, the DC Department of Health gives the ok for the resumption of partial pipe replacements. The largest partial lead service line replacement program in the nation's history begins.

June 2004: A science news article discusses the Virginia Tech findings about galvanic corrosion in chloraminated water.¹³ In response to the article, EPA Region 3 decides to fund the Reiber & Dufresne research (see 2006 below).

2005: EPA announces on a Washington, DC NPR-affiliate radio station that partial replacements are safe, both in the short- and long-term, and that there are *no* lead spikes associated with the practice.

2006: The EPA-funded Reiber & Dufresne 2006 study finds that galvanic corrosion is probably an inconsequential problem when lead pipes are well-aged and passivated. The conclusion is based on "surface potential," at best an indirect indicator of galvanic corrosion. Numerous lead-in-water measurements are paid for by EPA and are part of the experimental design, but to date they have not been made public despite repeated FOIA attempts by Marc Edwards at Virginia Tech. At the time that the study was published, citing Wujek to claim that "partial LSL replacement in the DCWASA system has not resulted in observed increases in lead release," the DC water utility and EPA collect hundreds of data points showing serious spikes in post-partial lead levels in DC homes.

2007: The facts about spikes after partial pipe replacement in DC homes are not revealed by the DC water utility or EPA, but are obtained by the public through a FOIA request. In my related FOIA of environmental risk assessments conducted at homes of children with elevated blood lead levels, parents reported a partial pipe replacement in 5 of 41 cases.

2008 & 2010: EPA Region 3 presents the Reiber & Dufresne 2006 study to Congress as proof that galvanic corrosion does not pose a significant health concern in waters with effective corrosion control treatment. At EPA's LCR public stakeholder meeting, a participant asks audience members to raise their hand if, given their current understanding, they would be in favor of partial replacements. Not one person in the audience raises their hand. The same occurred at the EPA LCR public stakeholder meeting in 2010. At that meeting, EPA did not even mention the term "galvanic corrosion."

Point 3: To date, no study has rigorously examined lead release long-term after partial pipe replacements, using flow rates that are representative of normal water use. For every dataset placed before you, your first questions should be 1) what was the flow rate, 2) were the pipes subjected to pre-flushing to remove lead particles, and 3) was the water allowed to sit stagnant in the pipe as usually occurs in home plumbing? All three techniques have been repeatedly manipulated in DC and elsewhere, and can “miss” problems with lead-in-water particles released during normal water use.

Your work has enormous financial, public health and environmental justice implications.

We thank you in advance for a careful scientific examination of this issue.

¹ Wujek, J.J. 2004. Minimizing Peak Lead Concentrations after Partial Lead Service Line Replacements. Proceedings AWWA Water Quality Technology Conference, San Antonio, TX.

² Reiber, S. and L. Dufresne. 2006. Effects of External Currents and Dissimilar Metal Contact on Corrosion of Lead from Lead Service Lines (Prepared for USEPA Region III).

³ McLaughlin, D. 2004. Pre and Post Partial Replacement Sampling Results (DC WASA e-mail to DC Department of Health) (May 4).

⁴ Capacasa, J. M. 2008. Q&A during Congressional Hearing before the Federal Workforce, Postal Service, and the District of Columbia Subcommittee of the House Oversight and Government Reform Committee (April 15).

http://www.epa.gov/ocirpage/hearings/testimony/110_2007_2008/2008_0415_jmc.pdf.

⁵ Hawkins, George S. 2010. Testimony of the DC Water and Sewer Authority (DC WASA) General Manager to the Washington, DC City Council (April 30).

<http://www.dewater.com/news/testimony/Oversight%20Questions.pdf>.

⁶ Brown, M. J., et al. 2011. Association Between Children’s Blood Lead Levels, Lead Service Lines, and Water Disinfection, Washington, DC, 1998-2006. *Environmental Research* 111(1):67-74.

⁷ Lead and Copper Rule, 40 CFR (1991): 26505.

⁸ Edwards, M. 2004. Letter to Michael R. Schock, EPA National Risk Management Research Laboratory (February 19).

⁹ Olson, E. D. 2004. Congressional Testimony (Hearing on Lead in DC WASA Water) (March 5). <http://www.dctrack.com/wasa/040305f.htm>.

¹⁰ Schwartz, P. D. 2004. Congressional Testimony (Hearing on the District of Columbia’s Lead Contamination Experience) (May 21). <http://www.dctrack.com/wasa/040521i.htm>.

¹¹ Lead Emergency Action for the District (LEAD). 2004. Emergency Actions Needed to Protect Public Health and Restore Public Confidence in DC Tap Water (February 26).

¹² Chair Brad Miller, US House Subcommittee on Investigations and Oversight, 10/5/10 Letter to EPA Administrator Jackson.

¹³ Renner, R. 2004. Plumbing the Depths of DC’s Drinking Water Crisis. *Environmental Science & Technology* 38(12):224A-227A.